Multispectral Imaging, Detection and Active Reflectance (MiDAR)

Completed Technology Project (2015 - 2016)

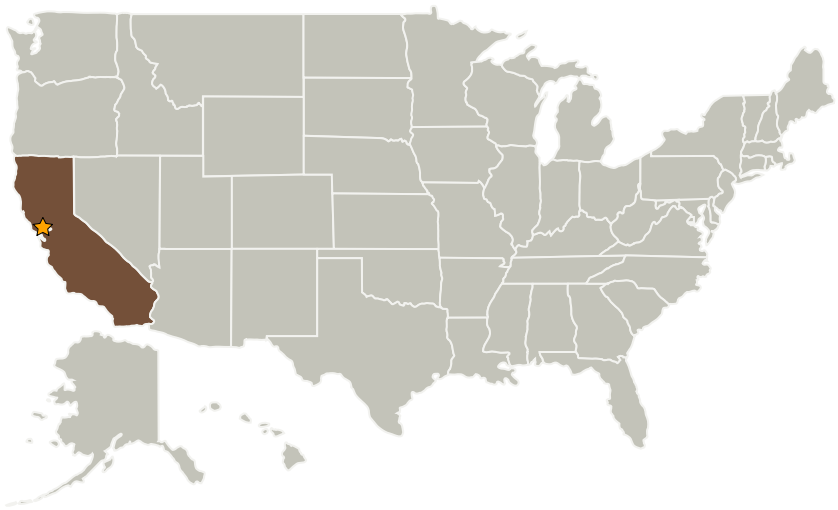
Project Introduction

MiDAR is capable of imaging objects from kilometers away in complete darkness, or with ambient light, at 4 MP with 90 color channels or up to 1500 color channels per second at reduced resolution. Such a system enables multispectral video at high frame-rates and has broad applicability to remote sensing from aircraft as well as robotic explorers operating in light-limited environments, such as those beyond Earth orbit. The goal of the project is to enable a 5-Channel TRL6 UAV demonstration of MiDAR and a 32-Channel TRL4 demonstration of MiDAR in laboratory.

Anticipated Benefits

Broad applicability to multispectral video: Earth Sciences, Airborne Science, Planetary Science, Medical, Industry. Follow-on work: Multiple applications for airborne use with NSF-funded work through Stanford.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California

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Table of Contents

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Center Innovation Fund: ARC CIF

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Primary U.S. Work Locations
California

Project Website:

https://www.nasa.gov/directorates/spacetech/home/index.html

Project Management

Program Director:

Michael R Lapointe

Program Manager:

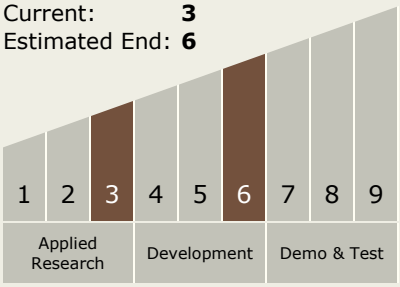
Harry Partridge

Principal Investigator:

Ved Chirayath

Technology Maturity (TRL)

Start: **3**
Current: **3**
Estimated End: **6**



Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.1 Detectors and Focal Planes